1. An isolated polynucleotide that encodes:

(i) a polypeptide comprising an amino acid sequence that is homologous to the amino acid sequence of a Helicobacter polypeptide selected from the group consisting of GHPO 15 (SEQ ID NO:2), GHPO 16 (SEQ ID NO:4), GHPO 36 (SEQ ID NO:6), GHPO 38 (SEQ ID NO:8), GHPO 52 (SEQ ID NO:10), GHPO 57 (SEQ ID NO:12), GHPO 64 (SEQ ID NO:14), GHPO 79 (SEQ ID NO:16), GHPO 84 (SEQ ID NO:18), GHPO 86 (SEQ ID NO:20), GHPO 99 (SEQ ID NO:22), GHPO 106 (SEQ ID NO:24), GHPO 118 (SEQ ID NO:26), GHPO 122 (SEQ ID NO:28), GHPO 128 (SEQ ID NO:30), GHPO 138 (SEQ ID NO:32), GHPO 153 (SEQ ID NO:34), GHPO 160 (SEQ ID NO:36), GHPO 168 (SEQ ID NO:38), GHPO 179 (SEQ ID NO:40), GHPO 189 (SEQ ID NO:42), GHPO 229 (SEQ ID NO:44), GHPO 243 (SEQ ID NO:46), GHPO 244 (SEQ ID NO:48), GHPO 251 (SEQ ID NO:50), GHPO 267 (SEQ ID NO:52), GHPO 269 (SEQ ID NO:54), GHPO 279 (SEQ ID NO:56), GHPO 284 (SEQ ID NO:58), GHPO 296 (SEQ ID NO:60), GHPO 300 (SEQ ID NO:62), GHPO 305 (SEQ ID NO:64), GHPO 319 (SEQ ID NO:66), GHPO 330 (SEQ ID NO:68), GHPO 340 (SEQ ID NO:70), GHPO 342 (SEQ ID NO:72), GHPO 344 (SEQ ID NO:74), GHPO 358 (SEQ ID NO:76), GHPO 373 (SEQ ID NO:78), GHPO 382 (SEQ ID NO:80), GHPO 384 (SEQ ID NO:82), GHPO 398 (SEQ ID NO:84), GHPO 409 (SEQ ID NO:86), GHPO 422 (SEQ ID NO:88), GHPO 430 (SEQ ID NO:90), GHPO 446 (SEQ ID NO:92), GHPO 447 (SEQ ID NO:94), GHPO 450 (SEQ ID NO:96), GHPO 451 (SEQ ID NO:98), GHPO 452 (SEQ ID NO:100), GHPO 456 (SEQ ID NO:102), GHPO 461 (SEQ ID NO:104), GHPO 476 (SEQ ID NO:106), GHPO 478 (SEQ ID NO:108), GHPO 491 (SEQ ID NO:110), GHPO 511 (SEQ ID NO:112), GHPO 519 (SEQ ID NO:114), GHPO 526 (SEQ ID NO:116), GHPO 534 (SEQ ID NO:118), GHPO 536 (SEQ ID NO:120), GHPO 542 (SEQ ID NO:122), GHPO 544 (SEQ ID NO:124), GHPO 576 (SEQ ID NO:126), GHPO 578 (SEQ ID NO:128), GHPO 580 (SEQ ID NO:130), GHPO 585 (SEQ ID NO:132), GHPO 599 (SEQ ID NO:134), GHPO 639 (SEQ ID NO:136), GHPO 642 (SEQ ID NO:138), GHPO 647 (SEQ ID NO:140), GHPO 654 (SEQ ID NO:142), GHPO 669 (SEQ ID NO:144), GHPO 710 (SEQ ID NO:146), GHPO

713 (SEQ ID NO:148), GHPO 716 (SEQ ID NO:150), GHPO 718 (SEQ ID NO:152), GHPO 726 (SEQ ID NO:154), GHPO 734 (SEQ ID NO:156), GHPO 740 (SEQ ID NO:158), GHPO 770 (SEQ ID NO:160), GHPO 782 (SEQ ID NO:162), GHPO 786 (SEQ ID NO:164), GHPO 792 (SEQ ID NO:166), GHPO 797 (SEQ ID NO:168), GHPO 816 (SEQ ID NO:170), GHPO 828 (SEQ ID NO:172), GHPO 839 (SEQ ID NO:174), GHPO 840 (SEQ ID NO:176), GHPO 842 (SEQ ID NO:178), GHPO 885 (SEQ ID NO:180), GHPO 889 (SEQ ID NO:182), GHPO 903 (SEQ ID NO:184), GHPO 912 (SEQ ID NO:186), GHPO 946 (SEQ ID NO:188), GHPO 958 (SEQ ID NO:190), GHPO 968 (SEQ ID NO:192), GHPO 987 (SEQ ID NO:194), GHPO 992 (SEQ ID NO:196), GHPO 996 (SEQ ID NO:198), GHPO 997 (SEQ ID NO:200), GHPO 1002 (SEQ ID NO:202), GHPO 1026 (SEQ ID NO:204), GHPO 1028 (SEQ ID NO:206), GHPO 1034 (SEQ ID NO:208), GHPO 1038 (SEQ ID NO:210), GHPO 1059 (SEQ ID NO:212), GHPO 1065 (SEQ ID NO:214), GHPO 1072 (SEQ ID NO:216), GHPO 1073 (SEQ ID NO:218), GHPO 1088 (SEQ ID NO:220), GHPO 1091 (SEQ ID NO:222), GHPO 1105 (SEQ ID NO:224), GHPO 1115 (SEQ ID NO:226), GHPO 1159 (SEQ ID NO:228), GHPO 1177 (SEQ ID NO:230), GHPO 1187 (SEQ ID NO:232), GHPO 1192 (SEQ ID NO:234), GHPO 1195 (SEQ ID NO:236), GHPO 1224 (SEQ ID NO:238), GHPO 1225 (SEQ ID NO:240), GHPO 1228 (SEQ ID NO:242), GHPO 1229 (SEQ ID NO:244), GHPO 1231 (SEQ ID NO:246), GHPO 1236 (SEQ ID NO:248), GHPO 1242 (SEQ ID NO:250), GHPO 1248 (SEQ ID NO:252), GHPO 1270 (SEQ ID NO:254), GHPO 1271 (SEQ ID NO:256), GHPO 1298 (SEQ ID NO:258), GHPO 1301 (SEQ ID NO:260), GHPO 1304 (SEQ ID NO:262), GHPO 1315 (SEQ ID NO:264), GHPO 1319 (SEQ ID NO:266), GHPO 1323 (SEQ ID NO:268), GHPO 1331 (SEQ ID NO:270), GHPO 1332 (SEQ ID NO:272), GHPO 1347 (SEQ ID NO:274), GHPO 1373 (SEQ ID NO:276), GHPO 1376 (SEQ ID NO:278), GHPO 1380 (SEQ ID NO:280), GHPO 1394 (SEQ ID NO:282), GHPO 1407 (SEQ ID NO:284), GHPO 1415 (SEQ ID NO:286), GHPO 1425 (SEQ ID NO:288), GHPO 1427 (SEQ ID NO:290), GHPO 1444 (SEQ ID NO:292), GHPO 1449 (SEQ ID NO:294), GHPO 1465 (SEQ ID NO:296), GHPO 1475 (SEQ ID

NO:298), GHPO 1479 (SEQ ID NO:300), GHPO 1483 (SEQ ID NO:302), GHPO 1488 (SEQ ID NO:304), GHPO 1496 (SEQ ID NO:306), GHPO 1524 (SEQ ID NO:308), GHPO 1536 (SEQ ID NO:310), GHPO 1539 (SEQ ID NO:312), GHPO 1540 (SEQ ID NO:314), GHPO 1542 (SEQ ID NO:316), GHPO 1555 (SEQ ID NO:318), GHPO 1560 (SEQ ID NO:320), GHPO 1564 (SEQ ID NO:322), GHPO 1570 (SEQ ID NO:324), GHPO 1588 (SEQ ID NO:326), GHPO 1604 (SEQ ID NO:328), GHPO 1605 (SEQ ID NO:330), GHPO 1619 (SEQ ID NO:332), GHPO 1629 (SEQ ID NO:334), GHPO 1642 (SEQ ID NO:336), GHPO 1654 (SEQ ID NO:338), GHPO 1661 (SEQ ID NO:340), GHPO 1673 (SEQ ID NO:342), GHPO 1687 (SEQ ID NO:344), GHPO 1692 (SEQ ID NO:346), GHPO 1693 (SEQ ID NO:348), GHPO 1699 (SEQ ID NO:350), GHPO 1738 (SEQ ID NO:352), GHPO 1745 (SEQ ID NO:354), GHPO 1746 (SEQ ID NO:356), GHPO 1754 (SEQ ID NO:358), GHPO 1792 (SEQ ID NO:360), GHPO 1795 (SEQ ID NO:362), and GHPO 1796 (SEQ ID NO:364); or

(ii) a derivative of said Helicobacter polypeptide.

2. The isolated polynucleotide of claim 1, which encodes a mature form of said Helicobacter polypeptide.

3. The isolated polynucleotide of claim 1, wherein the polynucleotide is a DNA molecule.

4. The isolated polynucleotide of claim 1, which is a DNA molecule that can be amplified by polymerase chain reaction from a Helicobacter genome.

5. The isolated DNA molecule of claim 4, which can be amplified by the polymerase chain reaction from a *Helicobacter pylori* genome.

6. The isolated polynucleotide of claim 1, which is a DNA molecule that encodes the mature form or a derivative of a polypeptide encoded by the DNA molecule of claim 4.

7. The isolated polynucleotide of claim 1, which is a DNA molecule that encodes the mature form or a derivative of a polypeptide encoded by the DNA molecule of claim 5.

8. A compound, in a substantially purified form, that is the mature form or a derivative of a polypeptide comprising an amino acid sequence that is homologous to a Helicobacter polypeptide selected from the group consisting of GHPO 15 (SEQ ID NO:2), GHPO 16 (SEQ ID NO:4), GHPO 36 (SEQ ID NO:6), GHPO 38 (SEQ ID NO:8), GHPO 52 (SEQ ID NO:10), GHPO 57 (SEQ ID NO:12), GHPO 64 (SEQ ID NO:14), GHPO 79 (SEQ ID NO:16), GHPO 84 (SEQ ID NO:18), GHPO 86 (SEQ ID NO:20), GHPO 99 (SEQ ID NO:22), GHPO 106 (SEQ ID NO:24), GHPO 118 (SEQ ID NO:26), GHPO 122 (SEQ ID NO:28), GHPO 128 (SEQ ID NO:30), GHPO 138 (SEQ ID NO:32), GHPO 153 (SEQ ID NO:34), GHPO 160 (SEQ ID NO:36), GHPO 168 (SEQ ID NO:38), GHPO 179 (SEQ ID NO:40), GHPO 189 (SEQ ID NO:42), GHPO 229 (SEQ ID NO:44), GHPO 243 (SEQ ID NO:46), GHPO 244 (SEQ ID NO:48), GHPO 251 (SEQ ID NO:50), GHPO 267 (SEQ ID NO:52), GHPO 269 (SEQ ID NO:54), GHPO 279 (SEQ ID NO:56), GHPO 284 (SEQ ID NO:58), GHPO 296 (SEQ ID NO:60), GHPO 300 (SEQ ID NO:62), GHPO 305 (SEQ ID NO:64), GHPO 319 (SEQ ID NO:66), GHPO 330 (SEQ ID NO:68), GHPO 340 (SEQ ID NO:70), GHPO 342 (SEQ ID NO:72), GHPO 344 (SEQ ID NO:74), GHPO 358 (SEQ ID NO:76), GHPO 373 (SEQ ID NO:78), GHPO 382 (SEQ ID NO:80), GHPO 384 (SEQ ID NO:82), GHPO 398 (SEQ ID NO:84), GHPO 409 (SEQ ID NO:86), GHPO 422 (SEQ ID NO:88), GHPO 430 (SEQ ID NO:90), GHPO 446 (SEQ ID NO:92), GHPO 447 (SEQ ID NO:94), GHPO 450 (SEQ ID NO:96), GHPO 451 (SEQ ID NO:98), GHPO 452 (SEQ ID NO:100), GHPO 456 (SEQ ID NO:102), GHPO 461 (SEQ ID

NO:104), GHPO 476 (SEQ ID NO:106), GHPO 478 (SEQ ID NO:108), GHPO 491 (SEQ ID NO:110), GHPO 511 (SEQ ID NO:112), GHPO 519 (SEQ ID NO:114), GHPO 526 (SEQ ID NO:116), GHPO 534 (SEQ ID NO:118), GHPO 536 (SEQ ID NO:120), GHPO 542 (SEQ ID NO:122), GHPO 544 (SEQ ID NO:124), GHPO 576 (SEQ ID NO:126), GHPO 578 (SEQ ID NO:128), GHPO 580 (SEQ ID NO:130), GHPO 585 (SEQ ID NO:132), GHPO 599 (SEQ ID NO:134), GHPO 639 (SEQ ID NO:136), GHPO 642 (SEQ ID NO:138), GHPO 647 (SEQ ID NO:140), GHPO 654 (SEQ ID NO:142), GHPO 669 (SEQ ID NO:144), GHPO 710 (SEQ ID NO:146), GHPO 713 (SEQ ID NO:148), GHPO 716 (SEQ ID NO:150), GHPO 718 (SEQ ID NO:152), GHPO 726 (SEQ ID NO:154), GHPO 734 (SEQ ID NO:156), GHPO 740 (SEQ ID NO:158), GHPO 770 (SEQ ID NO:160), GHPO 782 (SEQ ID NO:162), GHPO 786 (SEQ ID NO:164), GHPO 792 (SEQ ID NO:166), GHPO 797 (SEQ ID NO:168), GHPO 816 (SEQ ID NO:170), GHPO 828 (SEQ ID NO:172), GHPO 839 (SEQ ID NO:174), GHPO 840 (SEQ ID NO:176), GHPO 842 (SEQ ID NO:178), GHPO 885 (SEQ ID NO:180), GHPO 889 (SEQ ID NO:182), GHPO 903 (SEQ ID NO:184), GHPO 912 (SEQ ID NO:186), GHPO 946 (SEQ ID NO:188), GHPO 958 (SEQ ID NO:190), GHPO 968 (SEQ ID NO:192), GHPO 987 (SEQ ID NO:194), GHPO 992 (SEQ ID NO:196), GHPO 996 (SEQ ID NO:198), GHPO 997 (SEQ ID NO:200), GHPO 1002 (SEQ ID NO:202), GHPO 1026 (SEQ ID NO:204), GHPO 1028 (SEQ ID NO:206), GHPO 1034 (SEQ ID NO:208), GHPO 1038 (SEQ ID NO:210), GHPO 1059 (SEQ ID NO:212), GHPO 1065 (SEQ ID NO:214), GHPO 1072 (SEQ ID NO:216), GHPO 1073 (SEQ ID NO:218), GHPO 1088 (SEQ ID NO:220), GHPO 1091 (SEQ ID NO:222), GHPO 1105 (SEQ ID NO:224), GHPO 1115 (SEQ ID NO:226), GHPO 1159 (SEQ ID NO:228), GHPO 1177 (SEQ ID NO:230), GHPO 1187 (SEQ ID NO:232), GHPO 1192 (SEQ ID NO:234), GHPO 1195 (SEQ ID NO:236), GHPO 1224 (SEQ ID NO:238), GHPO 1225 (SEQ ID NO:240), GHPO 1228 (SEQ ID NO:242), GHPO 1229 (SEQ ID NO:244), GHPO 1231 (SEQ ID NO:246), GHPO 1236 (SEQ ID NO:248), GHPO 1242 (SEQ ID NO:250), GHPO 1248 (SEQ ID NO:252), GHPO 1270 (SEQ ID NO:254), GHPO 1271 (SEQ ID

NO:256), GHPO 1298 (SEQ ID NO:258), GHPO 1301 (SEQ ID NO:260), GHPO 1304 (SEQ ID NO:262), GHPO 1315 (SEQ ID NO:264), GHPO 1319 (SEQ ID NO:266), GHPO 1323 (SEQ ID NO:268), GHPO 1331 (SEQ ID NO:270), GHPO 1332 (SEQ ID NO:272), GHPO 1347 (SEQ ID NO:274), GHPO 1373 (SEQ ID NO:276), GHPO 1376 (SEQ ID NO:278), GHPO 1380 (SEQ ID NO:280), GHPO 1394 (SEQ ID NO:282), GHPO 1407 (SEQ ID NO:284), GHPO 1415 (SEQ ID NO:286), GHPO 1425 (SEQ ID NO:288), GHPO 1427 (SEQ ID NO:290), GHPO 1444 (SEQ ID NO:292), GHPO 1449 (SEQ ID NO:294), GHPO 1465 (SEQ ID NO:296), GHPO 1475 (SEQ ID NO:298), GHPO 1479 (SEQ ID NO:300), GHPO 1483 (SEQ ID NO:302), GHPO 1488 (SEQ ID NO:304), GHPO 1496 (SEQ ID NO:306), GHPO 1524 (SEQ ID NO:308), GHPO 1536 (SEQ ID NO:310), GHPO 1539 (SEQ ID NO:312), GHPO 1540 (SEQ ID NO:314), GHPO 1542 (SEQ ID NO:316), GHPO 1555 (SEQ ID NO:318), GHPO 1560 (SEQ ID NO:320), GHPO 1564 (SEQ ID NO:322), GHPO 1570 (SEQ ID NO:324), GHPO 1588 (SEQ ID NO:326), GHPO 1604 (SEQ ID NO:328), GHPO 1605 (SEQ ID NO:330), GHPO 1619 (SEQ ID NO:332), GHPO 1629 (SEQ ID NO:334), GHPO 1642 (SEQ ID NO:336), GHPO 1654 (SEQ ID NO:338), GHPO 1661 (SEQ ID NO:340), GHPO 1673 (SEQ ID NO:342), GHPO 1687 (SEQ ID NO:344), GHPO 1692 (SEQ ID NO:346), GHPO 1693 (SEQ ID NO:348), GHPO 1699 (SEQ ID NO:350), GHPO 1738 (SEQ ID NO:352), GHPO 1745 (SEQ ID NO:354), GHPO 1746 (SEQ ID NO:356), GHPO 1754 (SEQ ID NO:358), GHPO 1792 (SEQ ID NO:360), GHPO 1795 (SEQ ID NO:362), and GHPO 1796 (SEQ ID NO:364); or

(ii) a derivative of said Helicobacter polypeptide.

9. The compound of claim 8, which is the mature form or a derivative of a polypeptide encoded by a DNA molecule of claim 4.

10. The compound of claim 8, which is the mature form or a derivative of a polypeptide encoded by a DNA molecule of claim 5.

11. A method of preventing or treating Helicobacter infection in a mammal, said method comprising administering to said mammal a prophylactically or therapeutically effective amount of a compound of claim 8.

12. The method of claim 11, further comprising administering to said mammal an antibiotic, an antisecretory agent, a bismuth salt, or a combination thereof.

13. The method of claim 12, wherein said antibiotic is selected from the group consisting of amoxicillin, clarithromycin, tetracycline, metronidizole, and erythromycin.

14. The method of claim 12, wherein said bismuth salt is selected from the group consisting of bismuth subcitrate and bismuth subsalicylate.

15. The method of claim 12, wherein said antisecretory agent is a proton pump inhibitor.

16. The method of claim 15, wherein said proton pump inhibitor is selected from the group consisting of omeprazole, lansoprazole, and pantoprazole.

17. The method of claim 12, wherein said antisecretory agent is an H_2-receptor antagonist.

18. The method of claim 17, wherein said H_2-receptor antagonist is selected from the group consisting of ranitidine, cimetidine, famotidine, nizatidine, and roxatidine.

19. The method of claim 12, wherein said antisecretory agent is a prostaglandin analog.

20. The method of claim 19, wherein said prostaglandin analog is misoprostil or enprostil.

21. The method of claim 11, further comprising administering to said mammal a prophylactically or therapeutically effective amount of a second Helicobacter polypeptide or a derivative thereof.

22. The method of claim 21, wherein the second Helicobacter polypeptide is a Helicobacter urease, or a subunit or a derivative thereof.

23. A composition comprising a compound of claim 8, together with a physiologically acceptable diluent or carrier.

24. The composition of claim 23, further comprising an adjuvant.

25. The composition of claim 23, further comprising a second Helicobacter polypeptide or a derivative thereof.

26. The composition of claim 25, wherein said second Helicobacter polypeptide is a Helicobacter urease, or a subunit or a derivative thereof.

27. A method of preventing or treating Helicobacter infection in a mammal, said method comprising administering to said mammal a prophylactically or therapeutically effective amount of a polynucleotide of claim 1.

28. A method of preventing or treating Helicobacter infection in a mammal, said method comprising administering to said mammal a prophylactically or therapeutically effective amount of a polynucleotide of claim 4.

29. A method of preventing or treating Helicobacter infection in a mammal, said method comprising administering to said mammal a prophylactically or therapeutically effective amount of a polynucleotide of claim 7.

30. A composition comprising a viral vector, in the genome of which is inserted a DNA molecule of claim 3, said DNA molecule being placed under conditions for expression in a mammalian cell and said viral vector being admixed with a physiologically acceptable diluent or carrier.

31. The composition of claim 30, wherein said viral vector is a poxvirus.

32. A composition that comprises a bacterial vector comprising a DNA molecule of claim 3, said DNA molecule being placed under conditions for expression and said bacterial vector being admixed with a physiologically acceptable diluent or carrier.

33. The composition of claim 32, wherein said vector is selected from the group consisting of Shigella, Salmonella, *Vibrio cholerae,* Lactobacillus, Bacille bilié de Calmette-Guérin, and Streptococcus.

34. A composition comprising a polynucleotide of claim 1, together with a physiologically acceptable diluent or carrier.

35. The composition of claim 34, wherein said polynucleotide is a DNA molecule that is inserted in a plasmid that is unable to replicate and to substantially integrate in a mammalian genome and is placed under conditions for expression in a mammalian cell.

36. An expression cassette comprising a DNA molecule of claim 3, said DNA molecule being placed under conditions for expression in a procaryotic or eucaryotic cell.

37. A process for producing a compound of claim 8, which comprises culturing a procaryotic or eucaryotic cell transformed or transfected with an expression cassette of claim 36, and recovering said compound from the cell culture.

38. A method of preventing or treating Helicobacter infection in a mammal, said method comprising administering to said mammal a prophylactically or therapeutically effective amount of an antibody that binds to the compound of claim 8.